

**What is Claimed is:**

1. A semiconductor device comprising:  
a substrate coated with an insulating layer;  
5        a connecting part connected to a conductive layer  
through the insulating layer of the substrate;  
          a seed separating layer formed around the  
connecting part and the insulating layer to provide an  
open region that exposes at least part of the  
10      connecting part;  
          a seed layer disposed in the open region of the  
seed separating layer; and  
          a capacitor comprising a lower electrode formed  
on the seed layer, a dielectric medium formed on the  
15      lower electrode, and an upper electrode formed on the  
dielectric medium.
2. The semiconductor device as claimed in claim 1,  
wherein the seed layer is filled into the open region,  
20      and is disposed between the connecting part and the  
dielectric medium.
3. The semiconductor device as claimed in claim 1,  
wherein the seed separating layer comprises a material  
25      having an etch selection ratio with the insulating  
layer.
4. The semiconductor device as claimed in claim 1,  
wherein the seed separating layer has a thickness of  
30      ranging from about 50Å to about 2000Å.

5. The semiconductor device as claimed in claim 1,  
wherein the seed layer is formed of a material  
selected from the group consisting of Pt, Ru, Ir, Os,  
W, Mo, Co, Ni, Au and Ag.

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6. The semiconductor device as claimed in claim 1,  
wherein the seed layer has a thickness ranging from  
about 100Å to about 10000Å.

10 7. The semiconductor device as claimed in claim 1,  
wherein the connecting part is planarized with the  
insulating layer.

15 8. The semiconductor device as claimed in claim 1,  
wherein the connecting part comprises a plug and a  
barrier layer.

20 9. The semiconductor device as claimed in claim 8,  
wherein the plug comprises at least one material  
selected from the group consisting of polysilicon,  
tungsten (W), W-silicide), TiN, TiAlN, TaSiN, TiSiN,  
TaN, TaAlN, TiSi and TaSi.

25 10. The semiconductor device as claimed in claim  
8, wherein the barrier layer comprises a barrier metal  
layer and an oxygen diffusion barrier layer.

30 11. The semiconductor device as claimed in claim  
10, wherein the oxygen diffusion barrier layer  
comprises at least one material selected from the  
group consisting of Ir, Ru, Pt, Re, Ni, Co and Mo.

12. The semiconductor device as claimed in claim  
10, wherein the barrier metal layer comprises at least  
one material selected from the group consisting of TiN,  
TiAlN, TaSiN, TiSiN, TaN, RuTiN and RuTio.

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13. A method for fabricating a semiconductor  
device comprising:

forming a connecting part connected to a  
conductive layer through an insulating layer of a  
substrate;

10 forming a seed separating layer around the  
connecting part and the insulating layer to provide an  
open region exposing the connecting part;

15 forming a seed layer to fill the open region of  
the seed separating layer and cover the connecting  
part;

20 forming a lower electrode of a capacitor upon the  
seed layer;

25 forming a dielectric medium of the capacitor upon  
the lower electrode; and

forming an upper electrode of the capacitor upon  
the dielectric medium.

14. The method as claimed in claim 13, wherein  
25 the open region of the seed separating layer is formed  
on part of the connecting part and on part of the  
insulating layer.

15. The method as claimed in claim 13, wherein  
the step of forming the seed layer in the open region  
comprises:

5       depositing the seed layer on an entire surface of  
the seed separating layer and in the open region; and  
         carrying out a planarization to remove portions  
of the seed layer remaining on the seed separating  
layer.

10       16. The method as claimed in claim 13, wherein  
the seed separating layer has an etch selection ratio  
with the insulating layer.

15       17. The method as claimed in claim 13, wherein  
15       the insulating layer has a thickness ranging from  
about 50Å to about 2000Å.

18. The method as claimed in claim 13, wherein  
the step of forming the lower electrode comprises:

20       forming a capacitor sacrificial film pattern and  
etching the capacitor sacrificial film so as to expose  
the seed layer;

25       forming the lower electrode on the exposed seed  
layer by carrying out an electrochemical deposition  
method;  
         removing the capacitor sacrificial film; and  
         etching back the seed layer, for separating  
adjacent parts of the lower electrode.

30       19. The method as claimed in claim 13, wherein  
the seed layer comprises at least one material  
selected from the group consisting of Pt, Ru, Ir, Os,  
W, Mo, Co, Ni, Au and Ag.

20. A semiconductor device made in accordance with the method of claim 13.

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